DOCUMENT RESUME

ED 106 644 CE 003 818

TITLE	Principles and Practices of Occupational Safety and Health: Student Manual: Booklet Five.
INSTITUTION	Occupational Safety and Health Administration, Washington, D.C.
REPORT NO	OSHA-2217
NOTE	63p.; For related documents, see CE 003 813-819
AVAILABLE FROM	Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402 (Stock No. 2915-00041, $1.05)
EDRS PRICE	MF-$0.76 HC-$3.32 PLUS POSTAGE
DESCRIPTORS	Accident Prevention; Agencies; Autoinstructional Aids; *Health Education; *Industrial Training; Instructional Materials; Manuals; Post Secondary Education; Programed Units; Resource Materials; *Resources; *Safety Education; Study Guides; *Supervisory Training
IDENTIFIERS	Occupational Health; *Occupational Safety; Occupational Safety and Health Act 1970

ABSTRACT

The manual is the fifth of six student manuals for use in a course on occupational health and safety for supervisory personnel. The manual contains lessons 14 and 15 of the 15 consecutively-numbered lessons, each of which contains study questions (and answers) interwoven with the text and review questions at the end of each section. Lesson 14 covers sources of assistance in performing safety and health responsibilities, discusses the roles of a variety of sources both inside and outside industry, and provides 21 pages of resource agencies at the Federal and State level as well as service organizations and associations concerned with occupational health and safety. Lesson 15 summarizes the major points of the previous lessons and discusses various guidelines and goals for effectively practicing good occupational health and safety principles. (JR)

ED106644

A Programmed Instruction Course

Principles and Practices of Occupational Safety and Health

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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STUDENT MANUAL
Booklet Five

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration
Washington, D.C. 20210

OSHA 2217

CE003818

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LESSON 14

SOURCES

The lessons up to this point have stressed your responsibilities as a supervisor. In this lesson you will learn about sources that may be available both inside and outside your establishment TO ASSIST YOU in performing your job-related safety and health responsibilities.

HELP FOR YOU

Sources of assistance within your employer's organization are called INTERNAL RESOURCES. A number of internal resources are listed below. Although only a very large organization is likely to have most of these internal resources, all of the resources will be discussed so that you can identify and make use of the resources you do have access to. Resources to be discussed include the following:

- Safety and health specialists
- Purchasing department
- Maintenance department
- Design engineers (mechanical, electrical, and chemical)
- Industrial engineers
- Industrial designers
- Human factors specialists
- Company medical personnel
- Industrial hygienists
- Management personnel with a technical background useful in solving job safety and health problems

If your company has a SAFETY AND HEALTH SPECIALIST, this person obviously can be very helpful to you in your efforts to keep your workplace free of hazards. Many companies either employ a full-time safety and health specialist or officially assign safety and health responsibilities to a technical or administrative specialist. A safety and health specialist may have the title of Safety and Health Director, Safety and Health Officer, Safety and Health Engineer, or some similar title. INDUSTRIAL HYGIENIST is another title for a special kind of occupational health specialist. This specialist is discussed later in the lesson. Whatever the title, the safety and health specialist is the one responsible for the overall coordination of the employer's job safety and health programs. The safety and health specialist does the following kinds of things:

- gives advice to supervisors about job-related safety and health problems
- makes periodic safety and health inspections
- recommends corrections for hazardous practices and conditions

- inspects incoming machinery, equipment, and materials for safety and health hazards
- coordinates safety and health training programs
- maintains companywide injury, accident, and illness records and cost data
- records occupational injury and illness data as required by the Occupational Safety and Health Act

1. Which two of the following statements are sometimes true and which two are usually true about the safety and health specialist?

	Sometimes	Usually
a. safety and health responsibilities are the person's entire job	_____	_____
b. has other duties in addition to safety and health responsibilities	_____	_____
c. is responsible for overall coordination of the employer's safety and health program	_____	_____
d. can help you perform the safety and health part of your job	_____	_____

2. Which five of the following jobs is the safety and health specialist most likely to perform?

   a. make safety and health inspections

   b. recommend corrections for hazardous practices and conditions

   c. enforce job anti-bias laws

   d. coordinate safety and health training programs

   e. give advice to supervisors about safety and health matters

   f. act as timekeeper

   g. record injury, accident, and job-related illness data

   h. distribute pay envelopes

The safety and health specialist can assist you to do the following things:

- Conduct safety and health-hazard inspections
- Recognize and identify safety and health problems in your workplace
- Analyze hazards
- Develop specific control measures for potential hazards

ANSWERS TO QUESTIONS:

1. a. & b. Sometimes true c. & d. Usually true
   The safety and health specialist in your company may or may not have other duties besides solving safety and health problems. That really isn't important. What is important is that the safety and health specialist or chief engineer or personnel director, or whatever the person's title, is in charge of your company's safety and health programs and can help you apply these programs in YOUR WORKPLACE.

2. a., b, d. e., g.

- Conduct accident investigations and investigations of exposure to health hazards that lead to corrective action
- Select protective equipment for employees
- Bring in specialists from inside or outside the company to help solve your problems
- Get information about safety and health laws and standards
- Work with the compliance officer who inspects your operation
- Train the employees you supervise in good safety and health practices
- Arrange for or conduct first-aid training
- Develop safety and health rule bookiets and checklists
- Obtain movies, slides, posters, signs, and other aids for safety and health meetings or displays in the workplace
- Plan safety and health contests
- Get information from manufacturers or vendors about equipment and materials used in your workplace

An internal resource which some supervisors overlook is the purchasing department, purchasing agent, or whoever is responsible for buying equipment, materials, and supplies used in the supervisor's operation. Purchasing personnel can help you to get hazard-free equipment, materials and supplies by including safety and health considerations in the decisions they make about what products to buy for your operation. Purchasing personnel can also help you to get safety and health information about the products you use from the manufacturers and vendors of the products.

To influence the decisions that can result in obtaining hazard-free equipment and supplies purchased for use in your workplace, influence purchasing to include safety and health specifications and properties as an important part of the purchasing process.

Buying on the basis of price alone, or source alone, will not necessarily guarantee that you get the best equipment or material from the standpoint of safety and health. The time when your organization is purchasing things is an excellent time to be sure that the things purchased will make a positive contribution to the safety and health of the employees. Don't miss the opportunity to avoid buying trouble!

Manufacturers, vendors, and suppliers have a lot of information about their products, including information about the hazards and necessary safeguards associated with them. Your purchasing agent can arrange for you to contact vendors and get this information. For example, if you use chemicals in your operation, you need to know the contents of each chemical, what hazards are associated with the contents, what safeguards are advisable, and what specific treatment to use in case an employee gets exposed to the chemical. A good way to get safety and health information about chemicals and other equipment, materials, and supplies used in your workplace is to get your purchasing department to set up a contact with the vendor for YOU so you can get the needed information.

After all, the vendor wants to keep your business and will usually be happy to help you be better satisfied with the products you buy. Making sure the product you buy doesn't cause sickness or injury to the employees is one way for the vendor to keep your business.

Some types of information you can get from the manufacturer or vendor through your purchasing department are:

- Data sheets on chemicals, solvents, and hazardous materials, which describe the hazards, their effects, precautionary measures, and emergency first-aid actions
- Manuals, handbooks, and other instructive information to ensure safe and healthful operation and maintenance of machines and equipment
- Information about the critical parts of machinery and equipment to help you develop a safety and health inspection guide
- Checklists, start-up procedures, shutdown procedures, or other warning signs to attach to the controls or displays of equipment
- Names and addresses of others who use the same products so you can exchange tips about the uses or hazards of the product
- Movies, slides, pictures, training courses, or training aids for operators and maintenance personnel

In addition to getting information FROM the vendor or manufacturer, you can provide information TO the manufacturer or vendor about such things as a hazardous product, a health complaint, or an unguarded machine, for example, which could lead to product improvement on their part. This kind of exchange of product information between user and manufacturer is an example of two-way information flow.

The manufacturer is much more likely to improve a product if you, and other users, provide information about ways to make the product better. In turn, you get a safer, healthier product to use.

You can eliminate potential hazards at the time equipment, materials, or supplies are purchased by applying your knowledge of what hazards are involved and how they can be eliminated or controlled. Match each hazard described in Column A with a purchasing solution in Column B.

A		B
3. A solvent which is customarily used in your workplace is hazardous to employees' health	_____	a. Find out what nontoxic solvent will do the same job and have the purchase order specify the safe solvent be substituted for the hazardous one.
4. A type of machine used in your workplace is not properly guarded to protect the operator	_____	b. Find out whether safety devices for operator protection are listed as auxiliary equipment and, if so, have the devices included in the original purchase order.
5. Safety devices for operator protection are not supplied as standard equipment for a type of machine used in your workplace	_____	c. Have the purchase order written to require that the necessary safeguarding be built into the machine before it is delivered.
6. Materials hazardous to employees' health, which are used in your workplace, are not properly labelled	_____	d. Specify in the purchase order that the hazardous materials are to be shipped in leakproof containers and in a shape and form which can be safely handled by employees without hazardous exposure.
7. Incoming shipments of materials hazardous to employees' health are unhealthy for shipping personnel to receive and handle	_____	e. Specify in the purchase order that all material must be labelled as to contents and attention must be called to health hazards.
8. Equipment, materials, or supplies used in your workplace do not meet the standards of the Occupational Safety and Health Act	_____	f. Specify in the purchase order in clear and specific wording that purchased items must comply with the standards of the Occupational Safety and Health Act.

Be prepared to back up your safety and health purchase specifications (which may involve a higher purchase price) with data about injuries, accidents, and job-related illnesses, and with information about OSHA legal requirements that must be complied with. The reports and records of injuries and illnesses discussed in Lesson 3 will be useful backup for your purchasing requests.

Your purchasing department may be preoccupied with prices and delivery schedules and will not necessarily know about these other important safety and health considerations.

Don't overlook the fact that the purchasing department and the supervisor can be of mutual assistance in the investigation of an injury or job-related illness, especially when there is reason to suspect that the cause may be failure or poor design of machinery, equipment or faulty or hazardous materials or supplies. Involving purchasing personnel in injury and job-related illness investigation is a good way to make them aware of the safety and health ramifications of the items they purchase for your workplace.

There are a number of reasons why YOU should get involved in the purchasing of equipment, materials, and supplies used in your operation:

- You are on the local scene and know your operation.

ANSWERS TO QUESTIONS:

3. a. 4. c. 5. b.

6. e. 7. d. 8. f.

- You know the employees' habits.
- You have direct experience with the tools and equipment that have been tried before and did or did not work.
- You understand the environment in which the item is to be applied (hot, cold, wet, slippery, etc.).
- You can provide specific information about machine and process hazards that should be eliminated by change in design or guarding by the manufacturer.
- You can supply information about injuries and illnesses suffered and their causes, and about experience with machines, equipment and materials when such are to be reordered.
- You can provide specific information about health and fire hazards in the workplace.
- You can provide information on OSHA requirements (or be instrumental in getting the safety and health specialist to do so).

Another internal resource available to you is the maintenance department. Maintenance personnel can help you to identify the parts of your equipment and machinery which are most likely to develop hazardous conditions due to stress, wear, vibration, heat, or corrosion. You can use this information to prepare a safety and health inspection guide showing items to be inspected, parts that are most likely to be troublesome, and conditions and hazards to look for.

Watch which parts the maintenance people have to replace and ask yourself what would happen if that part broke. Watch your equipment operate and observe whether it behaves differently when maintenance is needed. Ask yourself if there is a hazard to your employees when the equipment operates differently depending upon the degree to which it has been well maintained or not.

9. An important aspect of maintenance, especially from a job safety and health point of view, is PREVENTIVE maintenance. Good preventive maintenance reduces injuries and illnesses caused by

_____.

a. Machine failure

b. Operator error

When your operation is in the process of expanding or being changed, the design engineers in your establishment will be involved in designing or redesigning the layout of your workplace, the equipment, and the process. A design engineer may be a mechanical engineer, an electrical or electronic engineer, a chemical engineer, and industrial engineer, or any one of a number of specialties. If you can arrange to get together with these design engineers and discuss problems from the viewpoint of someone who will work with the results of their design effort on a daily basis, you can make a significant contribution to future safety and

ANSWERS TO QUESTIONS:

9. Machine failure. Often the machine operator also does preventive maintenance on the machine. You can teach your operators to keep an eye out for things which may be getting unsafe or which may gradually be getting unhealthy. A muffler on a vehicle seldom fails all at once; you can usually notice leakage for some time before it actually blows apart completely. There are many examples where someone who is carrying out preventive maintenance can also notice things which will soon cause sickness or injuries if not fixed. Teach your maintenance people to keep a sharp eye out for potential trouble.

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health in your workplace. Whenever a design engineer is developing new equipment or processes for your work area, you can help that person design effective safety and health features into the new equipment or processes, so that injury and illness won't result.

It is important to remember that the best way to insure the safety and health of employees is to have sound safety and health measures built into new equipment or processes.

10. In addition to designing equipment and planning workspace layout, INDUSTRIAL ENGINEERS are also involved in methods improvement, work measurement, cost control, quality control, and establishment or revision of job procedures and work standards. By getting together with the industrial engineers in the EARLY STAGES of job design or redesign studies, you can help to eliminate potential safety and health hazards from jobs being planned. Here, as with machinery and equipment design, a good time to build in safe and healthful operation is when the procedure or process is _____.

    a. actually in operation

    b. on the drawing board

If a company does not have a person officially designated as a safety and health specialist, the industrial engineer is likely to combine the job of safety and health specialist with the other duties of the industrial engineering job. Since the industrial engineer is interested in improving efficiency, and since unsafe and unhealthy methods of doing a job are usually inefficient, it is logical to consult the industrial engineer about safety and health problems.

The INDUSTRIAL DESIGNER is usually involved with designing the products a company produces to sell, but may design equipment and materials for your establishment's own use as well. One of the primary considerations in designing products is how safe they are or whether they present a health hazard. The industrial designer is trained to give these matters a good bit of professional time. An industrial designer in one organization may perform some of the same duties that a design engineer performs in another establishment. In any case, the industrial designer will have a lot of good ideas about the way design of equipment contributes to safety and health. If you do not have someone designated as a safety and health specialist in your company, but do have an industrial designer, he would be a good person to contact for assistance with safety and health problems in your workplace.

Another type of specialist who may be available to help you inside your establishment is the HUMAN FACTORS SPECIALIST. Human factors specialists are also given titles such as: human engineers, engineering psychologists, or industrial psychologists. These specialists are involved in the design of tasks,

ANSWERS TO QUESTIONS:

10. b. On the drawing board. Your knowedge of your workplace and your ideas based on experience, combined with the industrial engineer's specialized training, can be instrumental in coming up with an efficient and hazard-free job design.

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equipment, products, and working environments to fit human capabilities. They are also involved in personnel selection, training, and motivation. Their goals are:

- Increasing safety and comfort and decreasing occupational injuries and illnesses
- Increasing efficiency and productivity and decreasing effort

Since safety and health is an integral part of a human factors engineering job, human factors engineers are a valuable resource to assist you in performing your safety and health responsibilities.

Such specialists are given training that enables them to give special consideration to the intellectual, emotional, and physical capabilities and limitations of the human. This specialist knows how your employees see, hear, think, forget, and all the other things humans do. The human factors specialist knows which things humans do well and which ones they do poorly, so this knowledge can be used to design equipment, to specify the best ways to do jobs, to control the working environment, and other useful knowledge. The human factors specialist can identify the effect of equipment and the working environment on employee safety and health and, therefore, would be well qualified to help in designing production equipment that will not cause illness or injury.

11. The improper design of equipment can be the cause of many accidents or illnesses. For example, if displays or controls are improperly designed and developed, the operator of that equipment can misread or interpret incorrectly a display, leading to an improper action being taken that could cause the illness or injury of other employees. As a practical example, suppose a dial is misleading and an operator opens a valve at the wrong time, scalding another employee who is out of sight in another work area. Human engineers are well trained to recognize this kind of human error and would have several ways to prevent it from happening by redesigning either the display, or the control, or both. Therefore, the _____ factors specialist can be quite valuable to you in obtaining the safest and healthiest equipment possible.

The human factors specialist can also be of assistance to you in determining the effects of the working environment on employee safety and health. For example, noise, lighting, temperature, humidity, and vibration all have serious influence on the human senses and on both physical and psychological health and well-being. The human factors specialist can see to it that employees will not be exposed to harmful levels causing health impairment. If you suspect that something in the work environment is a health hazard to employees, the human factors specialist is equipped to study the problem and recommend solutions.

Another category involving the human factors specialist is the assistance you can obtain in developing selection programs and training programs for employees. As you know from a previous lesson, it is sometimes necessary to select SPECIFIC people to do a given job according to their physical characteristics (strength, health, etc.), or their psychological characteristics (emotional stability, intelligence, etc.). The human factors specialist, being particularly well informed about people with all their abilities and weaknesses, can be helpful.

ANSWERS TO QUESTIONS:

11. Human

In addition, this specialist knows how people learn and forget, how to teach, and how to use training aids and simulators, and other such matters related to TRAINING. One important aspect of having a safe and healthful workplace is to train employees in safe and healthful operating procedures. The human factors specialist can help with both selection and training.

ON-SITE MEDICAL PERSONNEL

If your employer has medical facilities on site, then you have another internal resource to help you solve safety and health problems in your workplace. The doctors and nurses can give you information about occupational safety and health hazards and first aid. They may also be available to talk at safety and health meetings, to train the personnel you supervise, and to give advice about selection of protective equipment for employees.

Doctors and nurses are not there just to take care of emergencies. Their medical background and industrial experience can be valuable to you. People in these functions are usually well informed in their field and can help you benefit from safety and health information available from outside your company. Sometimes, the medical function in a company will be combined with the industrial hygiene function. Keep this close relationship in mind as you read the following items on industrial hygiene.

The detection of job-related health hazards and their elimination or control is the responsibility of the INDUSTRIAL HYGIENIST. This professional's job is to recognize and measure potentially harmful situations in the work environment and to apply prevention or control measures before harm results. If your employer has an industrial hygienist, this is a valuable internal resource to help you deal with potential job-related health hazards such as:

- Biological - bacteria, viruses, molds, yeasts, fungi, insects
- Chemical - liquids, gases, dusts, fumes, mists, vapors
- Ergonomic - body position in relation to tasks, monotony, fatigue
- Physical - radiation, noise, vibration, pressure, temperature extremes

Throughout this training course you have seen the effects of health hazards on employees (air contaminants, hazardous materials, caustic chemicals, etc.). The industrial hygienist can be of very great help to you in determining whether your establishment is complying with the OSHA Standards that deal with hazards.

The industrial hygienist has laboratories in which to make tests and is trained to measure the levels of contaminants in a work area, as well as being able to offer practical and effective solutions for eliminating health hazards that can cause illness.

12. Which is the best resource to help you recognize and evaluate conditions potentially harmful to employees' health in your workplace and develop controls or remedial measures for these conditions?

    a. Purchasing department

    b. Industrial hygienist

    c. Maintenance department

In the preceding sections describing the jobs of safety and health specialists, design engineers, industrial engineers and designers, human factors specialists, and industrial hygienists, it is obvious that there is overlap in their work. Much of their work is interrelated and they often have a mutual interest in the area of job safety and health. All of the following specialists could be contacted for help with a safety or health problem in your workplace:

- human factors specialist
- safety and health specialist
- industrial engineer
- design engineer
- industrial designer
- industrial hygienist

Any of these titles could designate a person in your company who could offer you valuable assistance with the safety and health part of your job.

Many SPECIALIZED organizations often have one of their own specialists in the organization because of frequency of need. Large chemical establishments may have their own dermatologist, for example, due to the frequency of contact dermatitis in their operations. In other organizations, an operations research person or management consultant would be a good source for help in safety and health problems. Whatever the title of the person involved, it would be of great value to you to contact these experts in your establishment so that they can help you in solving safety and health problems in your work area.

13. If your employer had all of the departments listed below, which nine would be most able to help you with safety and health problems in your work area?

a. Safety	_____	h. Medical	_____
b. Advertising	_____	i. Counseling	_____
c. Purchasing	_____	j. Industrial Hygiene	_____
d. Maintenance	_____	k. Industrial Engineering	_____
e. Sales	_____	l. Human Factors Engineering	_____
f. Payroll	_____		
g. Design Engineering	_____	m. Industrial Design	_____

ANSWERS TO QUESTIONS:

12. b. Industrial hygienist. Materials must often be converted from their natural state into usable products. Almost any conversion or modification process has byproducts which may create conditions that are potentially unhealthy. Detection and control of such hazardous conditions is a constantly changing and challenging area. This field of knowledge is not entirely within the framework of pure medicine so has come to be applied to industry by the industrial hygienist or similarly qualified person.

13. a., c., d., g., h., j., k., l., m.

EXTERNAL RESOURCES

Obviously, many small organizations do not have a big enough establishment to permit them to employ a FULL-TIME safety and health professional, an industrial hygienist, a human factors specialist, an industrial engineer, and industrial designer, or other professional personnel who specialize in safety and health problems. However, simply because they are small organizations doesn't necessarily prevent them from having BIG safety and health problems. These smaller establishments can solve their problems nicely by turning to one of the many OUTSIDE RESOURCES that can provide the necessary services either free or for a consultation fee. Several of these EXTERNAL RESOURCES are listed below:

- Agencies of federal, state, and local governments
- Service organizations
- Insurance companies
- Books, magazines, and other publications
- Consultants in various fields
- Manufacturers
- Other companies in the same business

These resources will be covered in detail in the following paragraphs.

GOVERNMENT AGENCIES

The largest external resource available to you outside your employer's organization is the FEDERAL GOVERNMENT. The exhibit (at the end of this lesson) lists the names and addresses of some potentially helpful government agencies. You will find the federal government has a broad and deep involvement with the safety and health fields, and wants to pass this information on to you so you can apply it. The federal government is a PARTICULARLY powerful resource for you if you will only take advantage of it.

The safety and health standards and regulations under the Act are officially published initially in the FEDERAL REGISTER.

The CODE OF FEDERAL REGULATIONS (CFR) 29 LABOR PART 1900 TO END is the annual codification of the general and permanent rules published in the FEDERAL REGISTER.

These two documents may be used together to determine the most up-to-date version of any given OSHA rule, regulation, or standard.

In addition to the two previous documents, a subscription service to supplement them provides all of the standards, interpretations, regulations, and procedures in an easy-to-use loose leaf form punched for a three-ring binder.

The subscription service includes notices of changes and additions to keep the service current. It is set in larger type and improved format.

The service is available in five volumes, as follows:

- Vol. I - General Industry Standards (Part 1910) $21.00
- Vol. II - Maritime Standards (Parts 1915-1918) $6.00
- Vol. III - Construction Standards (Part 1926) $8.00
- Vol. IV - Other Regulations and Procedures $5.50
- Vol. V - Field Operations Manual $8.00

These documents are available for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

External resources from which you can get more detailed information about the Occupational Safety and Health Act, as it affects you, are provided by the Occupational Safety and Health Administration (OSHA). There are 10 Regional Offices, and more than 100 Area, and District Offices located throughout the United States. There is a map showing the locations of the offices in Exhibit 14-2. For the information you need, contact the office nearest you.

Look at the map of OSHA regional offices in Exhibit 14-2. You will use this exhibit to answer the following items. There is a circled number for each region.

14. Assume your state is in the Boston region. Look at Exhibit 14-3 for information about the Boston region.

    a. In what city is the Boston regional administrator located? _____

    b. How many area offices are there in the Boston region? _____

    c. Where are the area offices located? _____

    d. Is there a district office in the Boston region? _____

    e. Where is it located? _____

ANSWERS TO QUESTIONS:

14. a. Boston
    b. 4 area offices
    c. Boston, Hartford, Concord, Springfield
    d. Yes
    5. Providence

---

15. Assume your state is in the New York region. Look at Exhibit 14-4 for information about the New York region.

    a. Where is the New York regional administrator located? _____

    b. How many area offices are there in the New York region? _____

    c. Where are the area offices located? _____

It would be a good idea to take the time now to find the region in which your establishment is located. Remember that contacting your area office is one of the best sources to obtain information about the Act.

GOVERNMENT AGENCIES WITH SPECIALIZED FUNCTIONS

Some of the government agencies listed in Exhibit 14-1 have responsibility in special areas of occupational safety and health which may apply to your operation. For example, the Atomic Energy Commission performs overall control and regulation of operations involving ATOMIC RADIATION; the Department of Transportation develops guidelines for SAFETY IN VEHICLES; and the Interstate Commerce Commission sets specific safety standards for establishments that participate in INTERSTATE COMMERCE (moving companies, trucking firms, etc.).

THE NATIONAL BUREAU OF STANDARDS AS A RESOURCE

A government agency that develops building and safety standards and assists other groups in preparing standards is the Department of Commerce, through its National Bureau of Standards. The Bureau conducts research on problems relating to fire safety, electrical equipment, construction standards, mechanical equipment, protective equipment, elevators, and hoists.

The National Institute for Occupational Safety and Health (NIOSH) in the Department of Health, Education, and Welfare was created by the same Act that set up OSHA. NIOSH is charged with conducting research in the occupational safety and health field and developing standards, and is involved with such problems as industrial heat stress, vibration, and engineering approaches for protecting employees.

Since NIOSH provides the criteria for setting many of the standards, it would be to your benefit to contact it for information regarding problems you may have in your establishment.

ANSWERS TO QUESTIONS:

15. a. New York
    b. 4 area offices
    c. New York, Long Island, Syracuse, Santurce (PR)

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16. Match each description of information provided, listed in Column A, with the name of the federal agency that provides the information.

A		B
a. Provides information about occupational safety and health research	____	• National Bureau of Standards
b. Provides information about building and safety standards	____	• National Institute for Occupational Safety and Health (NIOSH)

Many states have excellent INDUSTRIAL HYGIENE bureaus. Some states have well-equipped laboratories with numerous devices for sampling and analyzing which your establishment might not have because of large initial cost, need for specialized operator training, or infrequent or intermittent use. If your establishment needed sampling done in your work area to determine whether hazardous exposure levels are present, it might be wise to obtain assistance from one of these industrial hygiene bureaus.

You should investigate your state Department of Labor, Department of Health, Department of Transportation, or other such offices to find out what help they can provide to you.

SERVICE ORGANIZATIONS

Another type of external resource is offered by service and professional organizations such as the NATIONAL SAFETY COUNCIL. Exhibit 14-15 has a list of names and addresses of these organizations.

The National Safety Council is the largest service organization concerned with occupational safety and health, and is chartered by the federal government. The Council develops accident prevention and health hazard materials, carries out extensive industrial health programs, and coordinates programs in many areas of safety and health including: traffic, home, recreational, and public. Three of the Council's particularly helpful publications are: ACCIDENT PREVENTION MANUAL FOR INDUSTRIAL OPERATIONS, FUNDAMENTALS OF INDUSTRIAL HYGIENE, and NATIONAL SAFETY NEWS MAGAZINE.

A variety of services are provided by other service organizations. For example, free first-aid classes are taught by the American Red Cross and others. Assistance in the study of industrial health hazards is provided by the Industrial Hygiene Foundation, Inc. A program to prevent blindness in industry is sponsored by the National Society for the Prevention of Blindness.

ANSWERS TO QUESTIONS:

16. a. National Institute for Occupational Safety and Health (NIOSH)
    b. National Bureau of Standards

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17. Match each description of service provided, listed in Column A, with the name of the resource that provides the service, listed in Column B.

A		B
a. Publishes a basic safety reference book called ACCIDENT PREVENTION MANUAL FOR INDUSTRIAL OPERATORS, and a basic health reference book called FUNDAMENTALS OF INDUSTRIAL HYGIENE	_____	• Red Cross • National Safety Council • Industrial Hygiene Foundation • National Society for the Prevention of Blindness
b. Offers free first-aid classes	_____	
c. Sponsors a program to prevent blindness in industry	_____	
d. Promotes the study of industrial health hazards	_____	

Many INSURANCE COMPANIES provide industrial hygiene service as well as periodic safety inspections to their clients through their policy-holders' service division, or a similar department. It would be wise to suggest to your employer that he check with his insurance company to see what services are available. These services can be extremely helpful and are either free or relatively inexpensive.

As you learned in Lesson 11, Fire Loss Control, there are many standards that cover equipment and policy in your establishment. There is no better aid in this area than your local FIRE DEPARTMENT. It can suggest equipment to use as well as specific preventive measures that can be taken to insure the safety and health of your employees.

A wide variety of professional CONSULTANTS and private laboratories are available on a fee basis to augment any employer's internal resources in solving job safety and health problems. The services consultants perform range from concentrated studies of a specific problem, to plant-wide or establishment-wide surveys, for example, to identify and catalog individual environmental exposure levels for a particular work area. Many of the specialized fields such as industrial engineering, human factors engineering, industrial design, and industrial hygiene are available as an external resource for a reasonable consulting fee. Although the daily rate may be rather high, many times these consultants are able to solve severe problems within a short time because they have such wide experience and specialized skills, and can meet a problem easily and directly. As a result, their services are actually quite reasonable since they are such effective problem solvers.

If your employer is not aware of the availability of these specialists, it might be a good idea to call attention to the list in Exhibit 14-15 at the end of this lesson.

ANSWERS TO QUESTIONS:

17. a. National Safety Council b. Red Cross
    c. National Society for the Prevention of Blindness
    d. Industrial Hygiene Foundation, Inc.

A professional organization made up of individuals who work in the field of safety is the AMERICAN SOCIETY OF SAFETY ENGINEERS. This organization offers assistance to you in the form of technical and specialized information.

Another professional organization that would be helpful to you in giving you referrals of the names of industrial hygienists in your area is the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION.

TESTING LABORATORIES AS RESOURCES

Organizations performing specialized services include the Underwriters Laboratory, Inc., Factory Mutual Systems, and others. The Underwriters Laboratory, for example, tests electrical and other equipment. The UL label of certification is probably on the electrical equipment in your work area and, also, on the electrical equipment in your home. You can get a list of manufacturers whose products meet the fire or electrical standards of the Underwriters Laboratory. Your State Department of Commerce may give you a listing of industrial research laboratories in your area.

Two national consensus standards-setting organizations have been active in developing standards for industry, many of which have been adopted as OSHA standards. The AMERICAN NATIONAL STANDARDS INSTITUTE originally developed many of the occupational SAFETY and HEALTH standards that are now OSHA standards. THE NATIONAL FIRE PROTECTION ASSOCIATION originally developed most of the FIRE PROTECTION standards that are now OSHA standards.

18. Match each description of a service organization, listed in Column A, with the name of the organization listed in Column B.

A		B
a. Originally developed most of the fire protection standards which are now OSHA standards	____	• American National Standards Institute
b. Originally developed many of the occupational safety and health standards which are now OSHA standards	____	• National Fire Protection Association
c. An organization of safety professionals which provides technical information	____	• Underwriters Laboratory, Inc.
d. A laboratory which tests electrical and other equipment	____	• American Society of Safety Engineers

ANSWERS TO QUESTIONS:

18. a. National Firp Protection Association
    b. American National Standards Institute
    c. American Society of Safety Engineers
    d. Underwriters Laboratory, Inc.

Still another type of external resource is offered by the magazines and other publications of service organizations and professional groups. Exhibit 14-16 (at the end of this lesson) lists the names and publishers of some of these periodicals. The subjects covered in the publications include: fire protection, job hazards, occupational health, maintenance, and safety.

19. In the last exhibit in this lesson, you will find a bibliography with a list of references about occupational safety and health (Exhibit 14-17). To find the name of a book by a particular author, look for the name in alphabetical order.

    a. What is the name of the book by R. Davidson?

    _____

    b. What is the name of the book by Bird and Germain?

    _____

    To find the name of a publication by an organization in the bibliography, look for the name of the organization in alphabetical order.

    c. The National Fire Protection Association has two items listed in this bibliography. What are their titles?

    _____ and

    _____

ANSWERS TO QUESTIONS:

19. a. *Peril on the Job*
    b. *Damage Control*
    c. *Fire Protection Handbook*, and *Inspection Manual*

SUMMARY

Throughout this lesson you have learned quite a bit about the internal and external resources available to you for helping you solve the safety and health problems in your work area.

It is not enough to know just what help is available to you unless you use it to benefit the safety and health situation in your work area.

Since you have learned all of this information, it would be quite useful if you informed your employer of the services that are available. Whether the services are free or whether a fee is charged, all of these organizations are in operation to assist establishments in ridding the work area of hazards that can cause injuries, illnesses, death, or property damage.

It is recommended that you save the reference material in this lesson in an easily accessible place.

EXHIBIT 14-1

AGENCIES OF THE FEDERAL GOVERNMENT

Atomic Energy Commission
Washington, D.C. 20545

This commission has an established set of procedures for protecting employees from radiation, and has set requirements for the use of these materials.

Bureau of Labor Statistics
(Addresses of Regional Offices are listed in Exhibit 14-13.)

Contact this bureau to get copies of OSHA record-keeping forms.

Occupational Safety and Health Administration
U.S. Department of Labor
Washington, D.C. 20210

The main duty of this agency is to administer the standards issued under the Occupational Safety and Health Act of 1970. This agency, along with its regional and area offices (addresses given in Exhibits 14-3 through 14-12), will be an invaluable tool in obtaining help with regard to the Act.

Department of the Army
The Pentagon
Washington, D.C. 20330

The Army Director of Safety will furnish information on the handling of safety problems.

Department of Commerce
National Bureau of Standards
Washington, D.C. 20234

This bureau conducts research on many safety and health problems, including fire resistant materials and structural hazards in buildings.

Department of Health, Education and Welfare
National Institute for Occupational Safety and Health
Washington, D.C. 20201

The institute is another helpful aid since this is the organization that sets the specific criteria for the OSHA standards.

EXHIBIT 14-1 (Continued)

Department of Interior
Federal Water Pollution Control Administration
Washington, D.C. 20240

This agency's main duty is to assure a policy of prevention and control of water pollution.

The Federal Register
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Office of Information Services
Occupational Safety and Health Administration
U.S. Department of Labor
Washington, D.C. 20210

Will provide information on the Occupational Safety and Health Act of 1970.

Office of the Solicitor
U.S. Department of Labor
(Addresses of Regional Offices are listed on Exhibit 14-14.)

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

You can get a catalog of books and articles about accident prevention and other aspects of Occupational Safety and Health.

Office of Public Information
Interstate Commerce Commission
Washington, D.C. 20423

REGIONAL OFFICES

U.S. DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

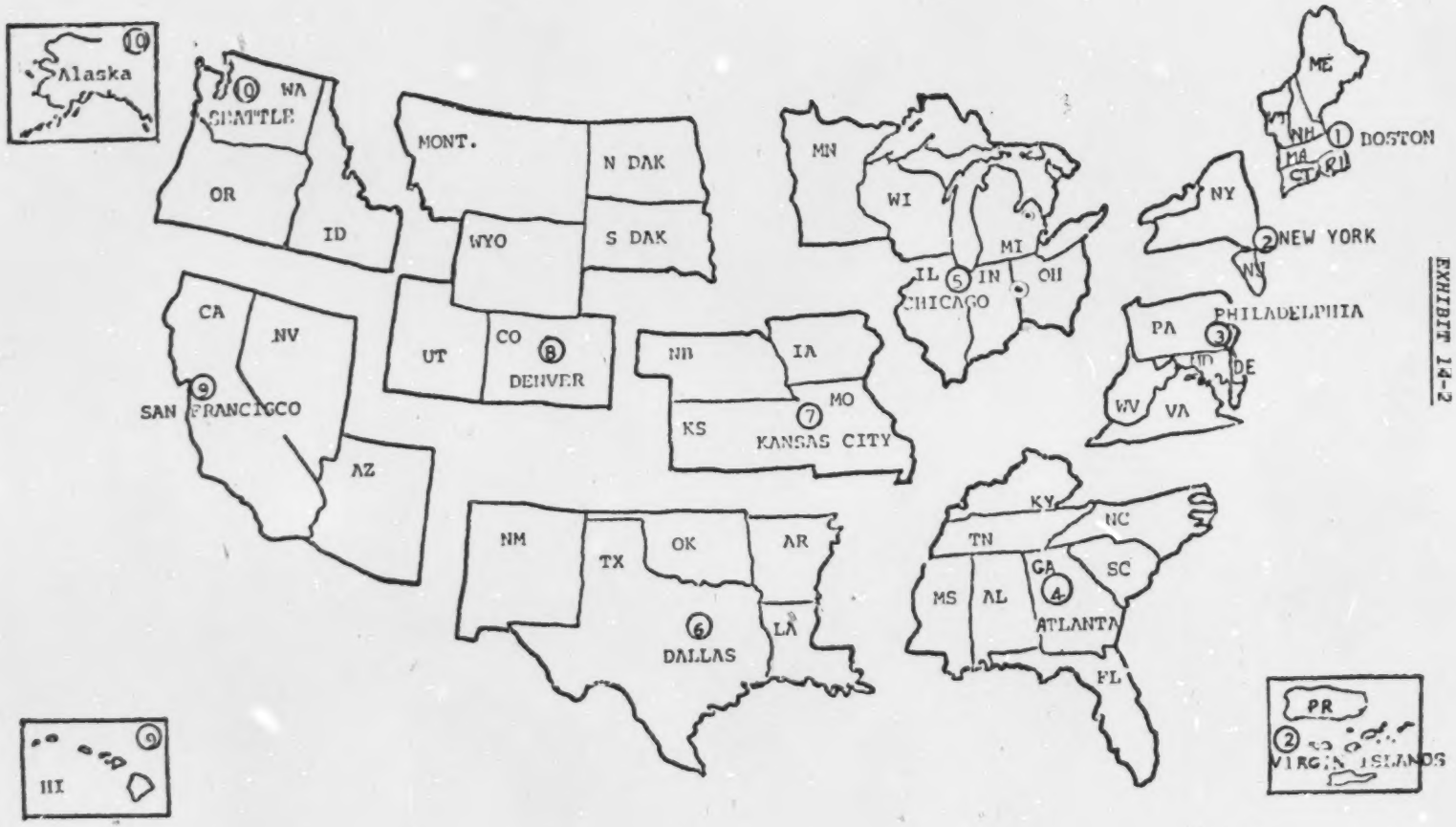

EXHIBIT 14-2

EXHIBIT 14-3**

REGION I

(Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health Administration
Fifth Floor
18 Oliver Street
Boston, Massachusetts 02110

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
Custom House Building
State Street
Boston, Massachusetts 02109

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Building - Room 617 B
450 Main Street
Hartford, Connecticut 06103

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Building - Room 425
55 Pleasant Street
Concord, New Hampshire 03301

U.S. Department of Labor
Occupational Safety & Health
Administration
U.S. Post Office & Courthouse Bldg.
436 Dwight Street - Room 501
Springfield, Massachusetts 01103

DISTRICT OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
59 Eddy Street, Room 613
Providence, Rhode Island 02903

**Explanatory note:

This and subsequent listings were current as of May, 1974. For information concerning additional offices which may have been added since that date, contact the Regional Office of OSHA nearest you.

EXHIBIT 14-4

REGION II

(New York, New Jersey, Puerto Rico, V gin Islands)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health
Administration
1515 Broadway (1 Astor Plaza)
New York, New York 10036

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
90 Church Street - Room 1405
New York, New York 10007

U.S. Department of Labor
Occupational Safety & Health
Administration
Room 203 - Midtown Plaza
700 East Water Street
Syracuse, New York 13210

U.S. Department of Labor
Occupational Safety & Health
Administration
370 Old Country Road
Garden City, Long Island, New York, 11530

U.S. Department of Labor
Occupational Safety & Health
Administration
Condominium San Alberto Bldg.
605 Condado Avenue
Santurce, Puerto Rico 00907

EXHIBIT 14-5

REGION III

(Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health Administration
15220 Gateway Center
Philadelphia, Pennsylvania 19107

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
William J. Green, Jr. Federal Bldg.
600 Arch Street
Philadelphia, Pennsylvania 19106

U.S. Department of Labor
Occupational Safety & Health
Administration
3661 Virginia Beach Blvd.
Stanwick Building - Room 111
Norfolk, Virginia 23502

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Building - Room 8081
400 N. 8th Street, P.O. Box 10186
Richmond, Va. 23240

U.S. Department of Labor
Occupational Safety & Health
Administration
Charleston National Plaza - Suite 1726
700 Virginia Avenue
Charleston, West Virginia 25301

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Building - Room 110A
31 Hopkins Plaza
Baltimore, Maryland 21201

U.S. Department of Labor
Occupational Safety & Health
Administration
Jonnet Building - Room 802
4099 William Penn Highway
Monroeville, Pennsylvania 15146

EXHIBIT 14-6

REGION IV

(Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health Administration
1375 Peachtree Street, N.E. - Suite 587
Atlanta, Georgia 30309

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
1371 Peachtree Street, N.E., Room 723
Atlanta, Georgia 30309

U.S. Department of Labor
Occupational Safety & Health
Administration
Room 204 - Bridge Building
3200 E. Oakland Park Boulevard
Fort Lauderdale, Florida 33308

U.S. Department of Labor
Occupational Safety & Health
Administration
2809 Art Museum Drive - Suite 4
Art Museum Plaza
Jacksonville, Florida 32207

U.S. Department of Labor
Occupational Safety & Health
Administration
Suite 554-E - 600 Federal Place
Louisville, Kentucky 40202

U.S. Department of Labor
Occupational Safety & Health
Administration
Commerce Bldg. - Room 801
118 North Royal Street
Mobile, Alabama 36602

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Office Building - Room 613A
310 New Bern Avenue
Raleigh, North Carolina 27601

U.S. Department of Labor
Occupational Safety & Health
Administration
1600 Hayes Street - Suite 302
Nashville, Tennessee 37203

U.S. Department of Labor
Occupational Safety & Health
Administration
Todd Mall, 2047 Canyon Road
Birmingham, Alabama 32516

U.S. Department of Labor
Occupational Safety & Health
Administration
Enterprise Bldg. - Suite 201
6605 Abercorn Street
Savannah, Georgia 31405

U.S. Department of Labor
Occupational Safety & Health
Administration
Commerce Building - Room 600
118 North Royal Street
Mobile, Alabama 36602

EXHIBIT 14-6 (Continued)

U.S. Department of Labor
Occupat[illegible]l Safety & Health
Admin[illegible]ation
1710 Gervais Street - Room 205
Columbia, South Carolina 29211

U.S. Department of Labor
Occupational Safety & Health
Administration
Riverside Plaza Shopping Center
2720 Riverside Drive
Macon, Georgia 31204

U.S. Department of Labor
Occupational Safety & Health
Administration
5760 I - 55 North Frontage Rd. East
Jackson, Mississippi 39200

EXHIBIT 14-7

REGION V
(Illinois, Indiana, Minnesota, Michigan, Ohio, Wisconsin)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health Administration
300 South Wacker Drive, Room 1201
Chicago, Illinois 60606

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
300 South Wacker Drive - Room 1201
Chicago, Illinois 60606

U.S. Department of Labor
Occupational Safety & Health
Administration
360 S. Third Street - Room 109
Columbus, Ohio 43215

U.S. Department of Labor
Occupational Safety & Health
Administration
Clark Building - Room 400
633 West Wisconsin Avenue
Milwaukee, Wisconsin 53203

U.S. Department of Labor
Occupational Safety & Health
Administration
U.S. Post Office and Court House
Room 423
46 East Ohio Street
Indianapolis, Indiana 46204

U.S. Department of Labor
Occupational Safety & Health
Administration
847 Federal Office Building
1240 East Ninth Street
Cleveland, Ohio 44199

U.S. Department of Labor
Occupational Safety & Health
Administration
Michigan Theatre Bldg. - Room 626
220 Bagley Avenue
Detroit, Michigan 48226

U.S. Department of Labor
Occupational Safety & Health
Administration
110 South Fourth Street, Room 437
Minneapolis, Minnesota 55401

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Office Bldg. - Room 5522
550 Main Street
Cincinnati, Ohio 45202

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Office Building - Room 734
234 N. Summit Street
Toledo, Ohio 43606

EXHIBIT 14-8

REGION VI

(Arkansas, Louisiana, New Mexico, Oklahoma, Texas)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health Administration
Suite 600 - Texaco Building
1512 Commerce Street
Dallas, Texas 75201

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
Adolphus Tower - Suite 1820
1412 Main Street
Dallas, Texas 75202

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Building - Room 421
1205 Texas Avenue
Lubbock, Texas 79401

U.S. Department of Labor
Occupational Safety & Health
Administration
Room 512, Petroleum Building
420 South Boulder
Tulsa, Oklahoma 74103

U.S. Department of Labor
Occupational Safety & Health
Administration
600 Leopard Street - Suite 1322
Corpus Christi, Texas 78401

U.S. Department of Labor
Occupational Safety & Health
Administration
307 Central Nat'l Bank Building
2100 Travis Street
Houston, Texas 77002

U.S. Department of Labor
Occupational Safety & Health
Administration
546 Carondelet Street - Room 202
New Orleans, Louisiana 70130

U.S. Department of Labor
Occupational Safety & Health
Administration
Donaghey Building - Room 303
103 East 7th Street
Little Rock, Arkansas 72201

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Building - Room 108
421 Gold Avenue, S.W.
Albuquerque, New Mexico 87103

U.S. Department of Labor
Occupational Safety & Health
Administration
Room 215
1015 Jackson Keller Road
San Antonio, Texas 78213

EXHIBIT 14-9

REGION VII
(Iowa, Kansas, Missouri, Nebraska)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
823 Walnut Street
Waltower Building, Room 300
Kansas City, Missouri 64106

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
1627 Main Street - Room 1100
Kansas City, Missouri 64108

U.S. Department of Labor
Occupational Safety & Health
Administration
210 North 12th Boulevard - Room 554
St. Louis, Missouri 63101

U.S. Department of Labor
Occupational Safety & Health
Administration
Petroleum Building
221 South Broadway Street - Suite 312
Wichita, Kansas 67202

U.S. Department of Labor
Occupational Safety & Health
Administration
City National Bank Building
Room 803
Harvey and 16th Streets
Omaha, Nebraska 61802

EXHIBIT 14-10

REGION VIII
(Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health Administration
Federal Building - Room 15010
P.O. Box 3588
1961 Stout Street
Denver, Colorado 80202

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
Squire Plaza Building
8527 W. Colfax Avenue
Lakewood, Colorado 80215

U.S. Department of Labor
Occupational Safety & Health
Administration
Suite 309, Executive Building
455 East Fourth, South
Salt Lake City, Utah 84111

U.S. Department of Labor
Occupational Safety & Health
Administration
Petroleum Building - Suite 525
2812 1st Avenue - North
Billings, Montana 59101

EXHIBIT 14-11

REGION IX
(Arizona, California, Hawaii, Nevada)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health Administration
10353 Federal Building
450 Golden Gate Avenue
Box 36017
San Francisco, California 94102

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
100 McAllister Street, Room 1706
San Francisco, California 94102

U.S. Department of Labor
Occupational Safety & Health
Administration
Suite 910, Amerco Towers
2721 North Central Avenue
Phoenix, Arizona 85004

U.S. Department of Labor
Occupational Safety & Health
Administration
1203 South Carson Street
Carson City, Nevada 89701

U.S. Department of Labor
Occupational Safety & Health
Administration
Hartwell Building - Room 401
19 Pine Avenue
Long Beach, California 90802

U.S. Department of Labor
Occupational Safety & Health
Administration
333 Queen Street - Room 505
Honolulu, Hawaii 96813

EXHIBIT 14-12

REGION X
(Alaska, Idaho, Oregon, Washington)

U.S. Department of Labor
Occupational Safety & Health Administration

Assistant Regional Director
U.S. Department of Labor
Occupational Safety & Health Administration
506 Second Avenue
1808 Smith Tower Building
Seattle, Washington 98104

AREA OFFICES

U.S. Department of Labor
Occupational Safety & Health
Administration
121 - 107th Street, N.E.
Bellevue, Washington 98004

U.S. Department of Labor
Occupational Safety & Health
Administration
Federal Building - Room 227
605 West 4th Avenue
Anchorage, Alaska 99501

U.S. Department of Labor
Occupational Safety & Health
Administration
U.S. Court House (New)
620 S.W. Main Street, Room 326
Portland, Oregon 97205

U.S. Department of Labor
Occupational Safety & Health
Administration
228 Idaho Building
216 North 8th Street
Boise, Idaho 83702

EXHIBIT 14-13

U.S. DEPARTMENT OF LABOR

BUREAU OF LABOR STATISTICS - Regional Offices

REGION 1 - Boston

Regional Director
Bureau of Labor Statistics
1603-A Federal Office Building
Boston, Massachusetts 02203

REGION 2 - New York

Regional Director
Bureau of Labor Statistics
1515 Broadway
New York, New York 10036

REGION 3 - Philadelphia

Regional Director
Bureau of Labor Statistics
Penn Square Building, Room 406
1317 Filbert Street
Philadelphia, Pennsylvania 19107

REGION 4 - Atlanta

Regional Director
Bureau of Labor Statistics
1371 Peachtree Street, N.E.
Atlanta, Georgia 30309

REGION 5 - Chicago

Regional Director
Bureau of Labor Statistics
300 South Wacker Drive - 8th Floor
Chicago, Illinois 60606

REGION 6 - Dallas

Regional Director
Bureau of Labor Statistics
1100 Commerce Street, Room 6B7
Dallas, Texas 75202

REGIONS 7 & 8 - Kansas City and Denver

Regional Director
Bureau of Labor Statistics
Federal Office Building
911 Walnut Street
Kansas City, Missouri 64106

REGIONS 9 & 10 - San Francisco and Seattle

Regional Director
Bureau of Labor Statistics
450 Golden Gate Avenue
Box 36017
San Francisco, California 94102

EXHIBIT 14-14

U.S. DEPARTMENT OF LABOR

OFFICE OF THE SOLICITOR - Regional Offices

REGION 1 - Boston

Regional Solicitor
U.S. Department of Labor
John F. Kennedy Federal Bldg.
Government Center - Room 1607
Boston, Massachusetts 02203

REGION 2 - New York

Regional Solicitor
U.S. Department of Labor
Parcel Post Building
341 Ninth Avenue - Room 900
New York, New York 10001

Regional Attorney
U.S. Department of Labor
Box 13344
Santurce, Puerto Rico 00908

REGION 3 - Philadelphia

Regional Solicitor
U.S. Department of Labor
Jefferson Building
1015 Chestnut Street
Philadelphia, Pennsylvania 19107

REGION 4 - Atlanta

Regional Solicitor
U.S. Department of Labor
1371 Peachtree St., N.E., Room 339
Atlanta, Georgia 30309

Associate Regional Solicitor
U.S. Department of Labor
1929 Ninth Avenue, South
Birmingham, Alabama 35205

Regional Attorney
U.S. Department of Labor
U.S. Court House Building
801 Broad Street, Room 725
Nashville, Tennessee 37203

REGION 5 - Chicago

Regional Solicitor
U.S. Department of Labor
Everett McKinley Dirksen Bldg.
219 South Dearborn St., Room 712
Chicago, Illinois 60604

Regional Attorney
U.S. Department of Labor
Federal Office Bldg., Room 881
1240 E. Ninth Street
Cleveland, Ohio 44199

Associate Regional Attorney
U.S. Department of Labor
1502 Washington Blvd. Bldg.
234 State Street
Detroit, Michigan 48226

REGION 6 - Dallas

Regional Solicitor
U.S. Department of Labor
Room 7052
Federal Bldg. & U.S. Court House
1100 Commerce Street
Dallas, Texas 75202

REGION 7 - Kansas City

Regional Solicitor
U.S. Department of Labor
2106 Federal Office Bldg.
911 Walnut Street
Kansas City, Missouri 64106

REGION 8 - Denver

Attorney-in-Charge
U.S. Department of Labor
Federal Office Building, Room 16444
1961 Stout Street
Denver, Colorado 80202

EXHIBIT 14-14 (Continued)

REGION 9 - San Francisco

Regional Solicitor
U.S. Department of Labor
Federal Bldg., P. O. Box 36017
450 Golden Gate Avenue
San Francisco, California 94102

Associate Regional Solicitor
U.S. Department of Labor
Federal Bldg., Room 7725
300 N. Los Angeles Street
Los Angeles, California 90012

REGION 10 - Seattle

Associate Regional Solicitor
U.S. Department of Labor
1911 Smith Tower Building
Seattle, Washington 98104

EXHIBIT 14-15

SERVICE ORGANIZATIONS AND ASSOCIATIONS

The following list will provide you with an idea of the types of services available to the general public as well as to members of these organizations. A more complete list of possible sources can be found in the National Safety Council publication titled "Accident Prevention Manual for Industrial Operations."

American Chemical Society
1155 16th Street, N.W.
Washington, D.C. 20036

- This society has a committee on chemical safety.

American Industrial Hygiene Association
210 Haddon Avenue
Westmont, New Jersey 08108

- This association will furnish names of industrial hygienists in your area.

American Medical Association
Department of Occupational Health
535 North Dearborn Street
Chicago, Illinois 60610

- This association has many pamphlets on occupational health subjects.

American National Standards Institute
1430 Broadway
New York, New York 10018

- Many standards set by this organization were adopted as OSHA's initial standards.

American National Red Cross
Safety Services
17th and D Streets N.W.
Washington, D.C. 20006

- This organization has developed training programs that will help your establishment meet the first-aid requirements listed in the standards.

American Public Health Association
1740 Broadway
New York, New York 10019

- A committee of this association deals with injury control and emergency services.

EXHIBIT 14-15 (Continued)

American Society for Testing and Materials
1916 Race Street
Philadelphia, Pennsylvania 19103

- The society sponsors research in the properties of engineering materials and develops standards, including specifications and test methods.

American Society of Safety Engineers
850 Busse Highway
Park Ridge, Illinois 60068

- The society promotes and develops educational programs for safety training and conducts research in safety areas.

Human Factors Society
P.O. Box 1369
Santa Monica, California 90406

- This society will help in the referral of human factors specialists upon request.

Industrial Hygiene Foundation of America, Inc.
5231 Centre Avenue
Pittsburgh, Pennsylvania 15232

- Will assist establishments in the development of health programs.

Industrial Medical Association
55 East Washington Street
Chicago, Illinois 60602

- This association sponsors committees in areas such as industrial hygiene and clinical toxicology, radiation, and education and training.

Industrial Safety Equipment Association, Inc.
60 E. 42nd Street
New York, New York 10017

- Will provide information on personal protective equipment for industry.

The National Fire Protection Association
60 Batterymarch Street
Boston, Massachusetts 02110

- A clearinghouse on the subjects of fire prevention and protection.

The National Safety Council
425 North Michigan Avenue
Chicago, Illinois 60611

- The largest organization in the world devoted to the prevention of injury. Accident prevention material and programs are available through this council.

National Society for the Prevention of Blindness, Inc.
79 Madison Avenue
New York, New York 10016

- Participates as a member of the American National Standards Institute in studies on illumination, vision, and eye protection.

Underwriters Laboratories, Inc.
207 East Ohio Street
Chicago, Illinois 60611

- Maintain laboratories for the examination and testing of devices, materials and systems.

EXHIBIT 14-16

PUBLICATIONS AND PERIODICALS

The following list of publications and periodicals should not be interpreted as the only literature available on the subjects of safety and health. These are, however, some major publications available for public use.

Subject: Fire Protection and Control

Title	Publisher
Fire Engineering	Reuben H. Donnelley 466 Lexington Avenue New York, New York 10017
Fire Journal Fire News Firemen Fire Technology	National Fire Protection Association 60 Batterymarch Street Boston, Massachusetts 02110

Subject: Hazards

Occupational Hazards	Industrial Publishing Corporation 812 Huron Road Cleveland, Ohio 44115

Subject: Health

A.M.A. Archives of Environmental Health	American Medical Association 535 North Dearborn Street Chicago, Illinois 60610
American Industrial Hygiene Association Journal	American Industrial Hygiene Association 210 Haddon Avenue Westmont, New Jersey 08108
Chemical Abstracts. (Toxicology, Air Pollution and Industrial Hygiene Section)	American Chemical Society 1155 Sixteenth Street, N.W. Washington, D.C. 20036
Industrial Hygiene News Report	Flournoy and Associates 1845 W. Morse Avenue Chicago, Illinois 60626
Industrial Hygiene Digest	Industrial Hygiene Foundation 5231 Centre Avenue Pittsburgh, Pennsylvania 15232

EXHIBIT 14-16 (Continued)

	Title	Publisher
Subject:	**Safety**	
	Journal of the American Society of Safety Engineers	American Society of Safety Engineers
	Safety Standards	Bureau of Labor Statistics U.S. Department of Labor Washington, D.C. 20210
	National Safety News Industrial Supervisor Traffic Safety Journal of Safety Research Safe Worker Safe Driver Safety Newsletters	The National Safety Council 425 N. Michigan Avenue Chicago, Illinois 60611

EXHIBIT 14-17

BIBLIOGRAPHY

PRINCIPLES OF OCCUPATIONAL SAFETY AND HEALTH

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LESSON 15

GUIDELINES AND GOALS

Throughout this training course you have learned quite a bit about the Occupational Safety and Health Act of 1970, as well as effective principles and practices of occupational safety and health.

It is not enough to memorize the information provided you to this point, unless you also have gained an insight into how these safety and health facts can be applied in your work area. The purpose of this lesson is to help you to develop guidelines and goals to effectively practice good safety and health techniques in the area of your responsibility.

Before we proceed in suggesting ways to develop guidelines and goals, it is important to start with a summary of the past lessons to refresh your memory about the relationship between the Act and sound principles and practices of occupational safety and health.

INTRODUCTION OF OCCUPATIONAL SAFETY AND HEALTH

In recent years, employers, unions, employees and the government have all seen the need for developing effective safety and health programs. Everyone has realized both the economic and humanitarian importance of keeping employees safe and healthy.

The figures on industrial accidents in this country reached serious proportions. The information presented in Lesson 1 gave an indication of the effect these industrial injuries and illnesses have on employees, their families, and employers.

Lesson 1 also indicated every employer should make a serious effort to provide safe and healthful workplaces for employees. It is a good business practice since it eventually will increase employee productivity and decrease lost production time.

It is impossible to put a dollar value on the wasted ability and contributions to society that are lost because of the death or disability of a fellow human. This brings us to a point that was stressed throughout this course: an employer has a legal responsibility to keep employees from illness or injury on the job.

THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

1. The general requirements of the Act state that every business affecting interstate commerce is to provide a workplace for employees that is free from recognized safety and health _____ .

2. The Act also sets up procedures for the adoption, publication, and enforcement of occupational safety and health _____ covering every business affecting interstate commerce.

3. The Act, as its name implies, is interested not only in the safety of employees, but also the health of those employees. Throughout this course we discussed incidents or conditions that impair the health of an employee. The Occupational Safety and Health Act is concerned with both the safety hazards and the _____ hazards that affect employees in their work area.

4. To effectively enforce the standards, the Occupational Safety and Health Administration (OSHA) has developed a program to inspect the workplaces of those establishments affected by the Act. Inspections are made by agents of OSHA who are known as _____ Officers.

ANSWERS TO QUESTIONS:

1. Hazards
2. Standards
3. Health
4. Compliance

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5. If an employer is found in violation of a safety and health standard, he may receive a citation as well as a proposed _____.

6. If an employer wishes to contest a citation or a proposed penalty, the first step is to bring the complaint to the wholly independent Occupational Safety and Health _____ Commission.

RECORDKEEPING REQUIREMENTS OF THE ACT

7. Regulations adopted pursuant to the Act require that records be kept on all recordable occupational _____ and _____ during the year.

8. Does a recordable injury or illness include those cases that just require first aid?

   a. Yes b. No

9. Many lessons in this course have pointed out the benefits that can be gotten from the forms that are required by the Act. One of the greatest benefits is by indicating to you where most of the accidents occur in your work area. When you can isolate where accidents occur, you can then inspect the work area to find the safety and health _____ that cause illness, injury, or death.

OCCUPATIONAL INJURY AND ILLNESS PREVENTION AND CONTROL PREVENT INJURIES OR CONTROL THEIR CONSEQUENCES

10. In Lesson 4, the fundamentals of occupational injury and illness prevention and control were discussed. Occupational injury and illness PREVENTION means taking action to avoid accidents or exposures to health hazards in the workplace. Injury and illness CONTROL means taking action to keep the undesirable effects of such events to a MINIMUM.

    a. Injury and illness PREVENTION means doing something to make occupational accidents and exposures to health hazards _____.

    b. Injury and illness CONTROL means doing something to make such events _____.

       - Less likely to occur
       - Less severe

ANSWERS TO QUESTIONS:

5. Penalty 6. Review 7. Injuries Illnesses

8. b. No. Any injury or illness that requires more than first aid should be recorded on the required forms.

9. Hazards

10. a. Less likely to occur b. Less severe

IMMEDIATE CAUSES

11. The immediate causes of occupational injuries and illnesses are HAZARDOUS ACTS and HAZARDOUS CONDITIONS. Hazardous _____ are the behavior and practices of employees. Hazardous _____ are mechanical, chemical, electrical, or other physical conditions within the workplace.

BASIC CAUSES

Personal factors are the REASONS that hazardous acts are performed. Job-related factors are the REASONS that hazardous conditions exist. These personal factors and job-related factors are the BASIC CAUSES of occupational injuries and illnesses. Personal factors are the reasons for any hazardous behavior or practices which the employees you supervise may perform. Job-related factors are the reasons for any hazardous mechanical, electrical, chemical, or other physical conditions which may exist in your workplace.

EMPLOYER CONTROL

12. Your employer has the authority to control the job behavior of employees and the authority to control the conditions of the workplace. Therefore, accidents and exposures to health hazards on the job result from LACK of proper _____ of hazardous behavior and hazardous conditions which cause such incidents.

a. Employer control b. Employer authority

One way to prevent and control illness and injury on the job is to TAKE THE HAZARDS OUT OF THE JOB using such techniques as job analysis. Job analysis involves observing an employee performing a job, breaking the job down into a sequence of steps, describing the hazards of each step, and identifying the key factors which are essential for safe and healthful performance of each job step. Key safety and health factors are the procedures that must be performed and the precautions and safeguards that are necessary to avoid an accident or exposure to a health hazard.

ANSWERS TO QUESTIONS:

11. Acts Conditions

12. Employer control

INVESTIGATING AND REPORTING ACCIDENTS AND EXPOSURES TO HEALTH HAZARDS IN THE WORKPLACE

IF IT IS SERIOUS, IT IS MORE LIKELY TO BE REPORTED

13. Lesson 5 discussed how to investigate an accident or an exposure to a health hazard which occurs in your workplace. It was pointed out that employees are more likely to report accidents with serious consequences and exposures to health hazards which produce immediate severe symptoms and less likely to report incidents which have minor consequences or produce minor or delayed symptoms. The types of occupational accidents and exposures to health hazards which are most likely NOT to be reported are those with _____ consequences or symptoms.

    a. Major b. Minor

14. The PURPOSE of investigating accidents, exposures to health hazards, and near misses is _____ . The best TIME to investigate is _____ .

    a. Prevention b. As soon as possible

15. The reports and records required by the regulations under the Occupational Safety and Health Act concerning an occupational injury or illness call for the following information:

    a. An identification of the _____ who was injured or made sick

    b. A description of the injury or illness

    c. A description of how the accident or exposure to the health hazard occurred

    d. An _____ of how the accident or exposure occurred

The investigation report which you prepare for your employer should contain a description of ACTIONS TAKEN and ACTIONS RECOMMENDED to prevent such an incident from occurring again. This is especially important if your investigation reveals that a violation of the federal safety and health standards is involved in the accident or exposure to a health hazard. When this is the case, immediate action must be taken to eliminate the violation to be in compliance with the law.

ANSWERS TO QUESTIONS:

13. b. Minor. You learned how to use the management techniques of training, repetition, praise, constructive criticism, and setting a good example to encourage employees to report all such incidents to facilitate investigation.

14. Prevention As soon as possible

15. a. Employee d. Analysis

CLASSIFICATION AND ANALYSIS OF SAFETY AND HEALTH HAZARDS

16. In Lesson 6, a hazard was defined as any action, condition, or state that has the potential to harm someone or something. Can a condition be called a hazard if it might cause:

	Yes	No
a. Property damage?	____	____
b. Personal injury?	____	____
c. Occupational illness?	____	____

17. Which of the following questions can you use to identify a potentially hazardous condition:

	Yes	No
a. Is there the possibility of overloading the equipment's capability?	____	____
b. Are there environmental hazards such as air contaminant, radiation, noise, temperature extremes, or flammable solvents?	____	____
c. What conditions exist that have potential as fire hazards?	____	____
d. Are chemical irritants or toxic agents involved?	____	____
e. Does the work present physical and/or mental stress?	____	____

There are three aspects to CLASSIFYING and ANALYZING hazards. These are recognition, evaluation, and control. After you recognize a hazard, you must evaluate the potential danger so that you can control the hazardous situation.

18. In Lesson 6 we presented a way to classify hazards in terms of potential loss severity. The three different hazard classifications are:

a. _____ hazard

b. _____ hazard

c. _____ hazard

ANSWERS TO QUESTIONS:

16. a., b., c., All "Yes."

17. a., b., c., d., e., All "Yes."

18. a. Class A b. Class B c. Class C

There are many types of hazards that can cause injury, illness, death, or property damage. Before trying to classify and analyze hazards, you must first know what is required by the Act. These requirements are called OSHA standards.

19. The main objective of classifying and analyzing hazards is to control the hazard before injury or illness can result. The three ways to control hazards are by elimination, segregation, or by providing _____ equipment to your employees.

FACILITY INSPECTION FOR SAFETY AND HEALTH HAZARDS

20. To be effective, any inspection program must be well organized and planned in a way that assures complete and timely inspection. This is in addition to the incidental ones you would make each day by looking for hazards as you go about your daily routine. If, during your daily routine, you discovered a specific hazard, you would be making a/an _____ inspection.

    a. Planned b. Incidental

The organized, planned inspection will be the most beneficial to you in identifying specific hazards, as well as helping you to decide what steps must be taken to correct the hazard. Only when the hazard has been corrected will employees' safety and health be protected.

21. A planned inspection will help identify the _____ cause of injuries and illnesses, and help you in eliminating them.

    a. Basic

    b. Immediate

22. How often should a planned inspection be performed?

    a. Every week _____

    b. Every month _____

    c. Depending on the problems to be inspected _____

There are two main objectives of a FORMAL safety and health inspection:

- To discover all undesired practices and conditions that could result in personal injury or the impaired health of your employees, or damage to equipment, and
- To evaluate and record the general degree of hazard associated with each problem as a guide to setting up remedial and preventive action priorities.

ANSWERS TO QUESTIONS:

19. Protective

20. b. Incidental

21. a. Basic

22. c.

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23. As you can see by the objectives listed above, the _____ of a formal safety and health inspection is very important.

    a. Timing

    b. Planning

Planning and performing a formal inspection take quite a bit of time and effort. You should keep in mind that all of this time and effort will be wasted unless you take remedial action to have the identified hazard corrected.

PRIMARY HEALTH HAZARDS AND MONITORING DEVICES

Health hazards result from either exposure of internal organs to toxic materials, or exposure of the skin and sense organs to toxic materials. These two types of exposures are called INTERNAL exposure and EXTERNAL exposure.

24. Classify the following examples as being either internal exposure (I) or external exposure (E):

    a. Swallowing a contaminant that was in the drinking water _____

    b. Skin rash _____

    c. Inhaling toxic fumes _____

    d. Eyes affected by harmful chemicals _____

    e. Burns on the skin from chemicals _____

    f. Breathing harmful mist _____

25. Throughout Lesson 8 we discussed the term THRESHOLD LIMIT VALUES (TLV). Whenever you look up the TLV for a particular material, you should keep in mind that these values are not necessarily limits of harmful exposure for one minute, one hour, or one day. A TLV is usually stated in terms of the material's effect over a specified period of time. If an employee was exposed to a contaminant above a specified TLV for two hours, would he be in danger of overexposure?

    a. Yes

    b. No

    c. Depends on the contaminant and the individual

ANSWERS TO QUESTIONS:

23. b.

24. a., c., f., (I) Internal b., d., e., (E) External

25. c.

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26. Which of the following can affect the health of employees?

	Yes	No
a. Airborne contaminants	_____	_____
b. Noise	_____	_____
c. Prolonged contact with harmful chemical agents	_____	_____
d. Improper lighting	_____	_____
e. Extreme high and low temperatures	_____	_____

27. As in all types of hazards, you should decide on ways that they can be controlled. As mentioned in many of the lessons of this course, the three ways to control hazards are to _____ , _____ , or supply personal _____ equipment.

28. One OSHA standard indicates that in cases where protective equipment and other measures are needed to protect employees from a health hazard, an industrial _____ or other technically qualified source should be consulted.

PERSONAL PROTECTIVE EQUIPMENT

In many cases you cannot eliminate or segregate hazards; so you must resort to protective equipment for your employees. The OSHA standards require such equipment and set criteria for eye and face protection, respiratory protection, occupational head protection, occupational foot protection, and electrical protective devices (CFR 1910 Subpart I). All of these standards are designed to protect employees from safety and health hazards in the work area.

29. It is advisable that there be quite a bit of time spent on choosing the equipment to match the type of hazard employees will be working under. If you are trying to choose a respirator that will filter out dust, remember that different respirators will be needed, depending upon the type and concentration of dust that is in your work area. Would the above statement be the same for a contaminant such as a gas?

    a. Yes

    b. No

As stated in many of the lessons, you should use protective equipment only as a last resort. You should first try other methods to control a specific hazard.

ANSWERS TO QUESTIONS:

26. a., b., c., d., e., All "Yes."

27. Eliminate Segregate Protective

28. Hygienist 29. a. Yes

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30. Is the following statement true or false? The use of protective equipment eliminates hazards.

    a. True b. False

One of the most important aspects of developing a program for the use of protective equipment is the training of employees to use and maintain their equipment.

31. One important point to remember with regard to all protective equipment is that management, employees, and visitors are required to wear protective equipment when going through a hazardous area. Does this mean that a Compliance Officer must be furnished protective equipment before going into a hazardous area?

    a. Yes b. No

EMERGENCY CARE FOR ILLNESS AND INJURY

32. Proper health care is an important part of the Act. The use of doctors, or people trained in first-aid techniques will help not only in saving lives, but also in helping to determine what toxic materials are present which are harmful to employees. The OSHA standards are quite specific in terms of the required medical services that should be available in a workplace. If an infirmary, clinic, or hospital is not near the workplace that is used to treat injured employees, should an employee be trained in proper first-aid techniques?

    a. Yes b. No

33. Lesson 10 discussed emergency care for nonbreathing, severe bleeding, and shock. The main reason for including these techniques was that some emergencies require immediate action to save a life until professional help becomes available. Obviously, any _____ knowledge you have may help you in saving the life of employees.

34. The last part of Lesson 10 discussed the importance of predetermined emergency procedure. Training employees in their responsibilities during an emergency will help cut down on confusion that so often results during an emergency. With proper _____ , everyone knows the correct procedures to follow, which include proper SHUTDOWN PROCEDURES and specific TELEPHONE NUMBERS for the fire department and medical aid.

FIRE LOSS CONTROL

35. In Lesson 11, you learned how to extinguish fires using the basic rule of fire control and the causes of fire. Are the following statements true or false?

    a. Fire occurs only when fuel, heat, and oxygen are combined?

    b. To stop a fire, remove or reduce any one of the three basic elements of a fire—fuel, heat, or oxygen?

ANSWERS TO QUESTIONS:

30. b. False. The protective equipment protects from the hazard, but the hazard remains and must be respected.

31. a. Yes. Everyone must be supplied with appropriate protective equipment.

32. a. Yes 33. First Aid 34. Training 35. a., b., True

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36. Fires in wood and other ordinary combustible materials like paper, cloth, rags, rubber, and trash are Class ____ fires. Two extinguishants to use for this class of fires are: 1) WATER, and 2) FOAM.

37. Flammable liquid and flammable gas fires, such as oil, gasoline, paint, and grease, are Class____ fires. To put out this class of fire, three extinguishants you can use are: 1) carbon dioxide, 2) foam, or 3) dry chemicals.

38. A fire in energized electrical equipment is a Class ____ fire. ("Energized" means the equipment is receiving electricity from the electrical power supply.) To put out this class of fire, two extinguishants which can be used are: 1) carbon dioxide, or 2) dry chemicals. In a Class C fire, it is important to use an extinguishant that _____ conduct electricity.

    a. Does b. Does not

39. A fire in metal or metallic dust is a Class ____ fire. Extinguishing a Class D fire requires a specific chemical for each specific metal.

COMMUNICATION AND MOTIVATION

Lesson 12 discussed the techniques of communication and motivation as applied to job safety and health. You learned that the Act requires certain specific communications between employer and employees. One communication requirement is that the employer display a copy of the OSHA poster titled "Safety and Health Protection on the Job." The poster informs employees of their rights and obligations under the law.

40. By displaying this poster, the employer can accomplish which two things described below?

    a. Inform employees about their protections and obligations under the law

    b. Comply with the law

    c. Inform employees about the employer's annual job-related injury and illness record

41. Another communication between employer and employee which is required by law is the annual summary of occupational injuries and illnesses. The employer must post this summary in a prominent place where it can be seen by all employees. By posting this annual summary, the employer can accomplish which two of the following things?

    a. Comply with the law

    b. Inform employees of their protections and obligations under the law

    c. Inform employees of the employer's job-related injury and illness record for the year

ANSWERS AND QUESTIONS:

36. "A" 37. "B"

38. "C" b. Does not 39. "D"

40. a. . . . protections and obligations b. Comply with the law

Employees also have to be informed about the annual job-related injury and illness record, but this not contained in the OSHA poster.

41. a. Comply with the law c. Inform employees of employer's record

Information about employee protections and obligations under the law is in the OSHA poster.

A good safety and health communication technique is regular safety and health meetings. Short meetings held frequently are better than long meetings held at greater intervals. Covering only one subject at a meeting is better than covering several subjects. Based on these guidelines, a 15-minute meeting held each week to cover a single subject will be more effective than one-hour meeting held once a month to cover several subjects.

42. If a supervisor wants to have a series of weekly 15-minute safety and health meetings, wants to cover a single subject at each meeting, and wants to encourage participation of employees in the meetings, which two practices will help accomplish all three objectives?

    a. Have longer meetings

    b. Discourage discussion

    c. Schedule 10 minutes of presentation and 5 minutes of discussion (or vice versa)

    d. Arrange to be contacted after the meeting about other subjects that come up

OCCUPATIONAL SAFETY AND HEALTH TRAINING

Lesson 13 discussed the application of training techniques to safety and health training. Before any employee you supervise starts a job that is new to that employee, it is your responsibility to provide safety and health training for that specific job. This means training should be provided to:

- new employees,
- an employee who is changing jobs,
- a newly created job, and
- a job which has been changed.

One part of safety and health training involves teaching general company and departmental safety and health rules. This is important in developing job safety and health awareness. However, telling employees the general rules does not necessarily mean they will be able to figure out how to apply the rules to their

ANSWERS TO QUESTIONS:

42. c. and d. By encouraging employees to stick to one subject at a meeting but to come around later to talk about other things that come up, it is possible to cover the chosen subject in a short meeting and, at the same time, not discourage employees from speaking up.

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own jobs without being taught. Application of general rules to specific job situations doesn't occur automatically. As a part of the training process, you must convert general safety and health rules into specific safety and health practices for an employee to apply to a specific job.

In addition to teaching a new employee how to apply the general and departmental safety and health rules to the job the employee will do, it is necessary to teach the employee about the hazards specific to the job and how to avoid them. To accomplish these goals, safety and health training about a specific job should include both the following:

- Instructions about the specific hazards of the new job
- Instructions about the specific procedures, precautions, and safeguards necessary to perform the specific job without injury or illness

EXPLAIN how to perform each job step safely and healthfully and then DEMONSTRATE how to perform each step. Be sure to perform the step EXACTLY as you want the employee to do it. If personal protective equipment is required, use it. The purpose of the supervisor performing a safety or health procedure exactly as the supervisor wants the employee to perform it accomplishes the following:

- The employee sees each potentially hazardous step of the new job performed exactly as it should be done.
- The employee learns safe and healthful work habits
- The employee sees how to avoid the hazards of the job

43. Understanding of the need for safeguard devices on machines and for personal protective equipment, where required, is not automatic. It must be taught. It is not sufficient to merely mention the need for personal protective equipment where it is required. The purpose and function of the equipment must be explained in detail, for which of the following reasons?

    a. The employee is more likely to be willing to tolerate a certain amount of inconvenience or discomfort.

    b. The employee is less likely to try to make safeguard devices inoperative or to use the wrong kind of equipment for personal protection against a particular hazard.

    c. The employee will know that the hazard has been eliminated.

ANSWERS TO QUESTIONS:

43. a. and b.

RESOURCES FOR THE SUPERVISOR

Lesson 14 discussed some sources available both inside and outside your company to assist you in performing your job-related safety and health responsibilities. The following are potentially good safety and health resources often available inside a company.

- Purchasing department personnel
- Maintenance department personnel

A number of professional and technical specialists are potentially good safety and health resources. The jobs of some of these specialists including safety and health professionals, design engineers, industrial engineers, industrial designers, human factors specialists, and industrial hygienists were described; and it was pointed out that there is a great deal of overlap in the work these various specialists do. Much of their work is interrelated, and they often have a mutual interest in the area of job safety and health.

The human factors specialist is an especially valuable resource to assist you in performing the safety and health responsibilities of your job. The human factors specialist is informed about the intellectual, emotional, and physical capabilities and limitations of the human; the mechanism by which people see, hear, think, and forget; and the kinds of tasks people do better than machines and the kinds of tasks machines do better than people. The human factors specialist can assist you to:

- Design production equipment and work procedures that utilize human capabilities efficiently, are compatible with human limitations and are not potentially unsafe or unhealthful.
- Determine the potential effect on employees of noise, lighting, temperature, humidity, and vibration in the workplace and avoid exposure of personnel to harmful levels causing health impairment.
- Develop personnel selection and training programs.

Obviously, many organizations are not large enough to permit the employment of a full-time safety and health professional, an industrial hygienist, a human factors specialist, an industrial engineer, an industrial designer, or other professional personnel who specialize in safety and health problems. However simply because these organizations are small doesn't necessarily mean they do not have big safety and health problems. Don't forget the following outside resources who provide the necessary services, either free or for a consultation fee, that smaller establishments can turn to for help.

- Agencies of the federal, state or local governments
- Nonprofit service organizations
- Insurance companies
- Consultants in various fields

- Manufacturers
- Other companies in the same business
- Books, magazines, and other publications

44. OSHA is the government agency that sets standards, enforces them and provides information about the Occupational Safety and Health Act of 1970 as it affects you. OSHA has 10 Regional Offices and more than 100 Area and District Offices located throughout the United States. For the information you need, contact _____ as indicated on the map in Lesson 14.

    a. Any office

    b. The office nearest you

CONSULTANTS

A wide variety of professional consultants and private laboratories are available on a fee basis to augment an employer's internal resources in solving job safety and health problems. Consultants perform services ranging from concentrated studies of specific problems to plant-wide surveys on subjects such as determining levels of health hazards to which individual employees are exposed. Many experts from specialized fields, including industrial engineering, industrial designing, and industrial hygiene, are available for a reasonable consulting fee. Consultants are often able to solve a very severe safety or health problem within a short time because they have such wide experience and highly specialized skill that they can hit your problem easily and directly.

KEY QUESTIONS FOR SELF APPRAISAL

As you have seen, the first part of this lesson dealt with a summary of the information you have studied in this course up to this point. Now that you have refreshed your memory, we want you to use your newly acquired knowledge of safety and health to appraise your present attitude toward safety and health practices in your work area.

There will be no correct answers given for these appraisal questions that follow since each supervisor will probably answer each question in a different way. You should keep in mind, though, that these questions are quite important because they may show areas in which you need to put more emphasis as you go about your daily routine in your work area.

In the next item you will find a list of questions that we call KEY QUESTIONS FOR SELF-APPRAISAL. You can use these questions as an inventory of performance appraisal guidelines. By doing a complete and conscientious job of analyzing your performance, answering each question as carefully and candidly as possible, and putting your answers in WRITING, you will have a very useful performance profile.

KEY QUESTIONS FOR SELF-APPRAISAL

1) Am I really a "safety-and-health-minded supervisor"?

2) Does my behavior (my actions; the things I do) show employees I supervise that I am truly interested in safety and health, or that I only pay lip service to it?

3) How well do I know the duties and rights of employers and employees under the Occupational Safety and Health Act of 1970?

ANSWERS TO QUESTIONS:

44. b.

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4) How knowledgeable am I about the occupational safety and health standards applicable to the jobs in my area of supervisory responsibility?

5) In my area of responsibility, how complete a job do I do of recording and reporting injuries and illnesses to help my company meet the legal recordkeeping requirements?

6) How much analysis do I make of statistics about accident and exposure to health hazards to pinpoint the most critical hazards, jobs, operations, or accident repeaters?

7) To what extent are my illness and injury prevention efforts predictive, active, before-the-loss . . . rather than reactive, after-the-loss efforts?

8) To what degree am I taking a total systems approach to injury and illness prevention and control?

9) How completely do I investigate accidents and exposures to health hazards with major consequences? With minor consequences? Near-misses?

10) To what degree are my investigations of accident and exposure to health hazards aimed at blame-fixing, and to what degree are they aimed at "prevention"?

11) What steps do I take to insure that ALL accidents, exposure to health hazards, and near-misses are reported?

12) How complete are my investigation reports of accidents and exposure to health hazards?

13) How thoroughly do I seek out, analyze, and take action to control hazards?

14) How thoroughly do I explore hazard "elimination" and "segregation" before relying on "protection" as a control measure?

15) How familiar am I with the standards?

16) Are my facility inspections as thorough as those made by government Compliance Officers?

17) Do I make planned, organized inspections in addition to the daily, informal ones?

18) How well does my work area rate on housekeeping and order?

19) How complete and systematic are my efforts toward remedial action and follow-up (to discover and correct hazards before they cause injuries, illnesses, or damages)?

20) How much use have I made of an industrial hygienist, or other professionally trained safety and health specialist, to learn about control of health hazards?

21) To what degree am I including "health hazards" in my inspection, investigation, and remedial activities?

22) How well am I making employees aware of safety and health hazards, their potential effects, and proper precautionary measures?

23) How completely am I living up to the law in helping provide employees ". . . employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm . . ."?

24) How familiar am I with the standards and requirements for personal protective equipment?

25) How well do I keep employees informed of the reasons for personal protective equipment, its proper use, and its limitations?

26) What kind of personal example do I set regarding personal protective equipment?

27) How well do I know how to save lives by artificial respiration? By control of severe bleeding? By treating traumatic shock?

28) Do I know the risk involved in using a tourniquet?

29) To what degree is my work area properly posted and prepared for emergencies?

30) How well have I trained employees in emergency procedures and critical first-aid techniques?

31) How well are we meeting the law's requirements for medical services, first-aid training, and first-aid supplies?

32) How familiar am I with the different classes of fire and how to fight them?

33) How much training have I given employees I supervise regarding fire prevention and control?

34) Does my area meet the law's requirements on size and placement of fire extinguishers, and their periodic inspections?

35) How often do I include Fire Loss Control topics in my safety and health meetings?

36) During my facility inspections, how thoroughly do I cover fire hazards?

37) To what degree do I make employees aware of the importance of "good housekeeping" as a fire prevention tool?

38) How well am I communicating both the "letter of the law" and the "spirit of the law"?

39) What variety of techniques am I using to communicate about safety and health?

40) What variety of techniques am I using to motivate people to think, act, and live safely and healthfully on the job?

41) Do I rely solely on "negative" discipline, or do I also make frequent use of "positive" constructive discipline?

42) How often do I have safety and health meetings for employees?

43) How much use do I make of visual aids to help employees really "see what I mean"?

44) How often do I use information from the Act, and the standards in my safety and health meetings?

45) How good a job do I do in training employees in good safety and health techniques?

46) How well do I use the tell-show-test-check method of job instruction?

47) Do I have the habit of giving a safety or health tip with each job assignment?

48) How systematically and completely do I meet my responsibilities for job observation and performance discussion?

49) To what degree do I make sure that equipment operators are trained to a level of skill that enables them to produce quality products efficiently and safety?

50) How much use do I make of the help that can be provided by safety, medical, and industrial hygiene people?

51) How much use do I make of the help that can be provided for safety and health by the purchasing, engineering, and maintenance functions?

52) How much use do I make of the help that can be provided by governmental groups?

53) How much use do I make of the help that can be provided by safety and health associations and professional organizations?

54) How much use do I make of the help that can be provided by insurance companies?

55) How much reading do I do each week to help me meet my safety and health responsibilities?

56) To what degree have I put this course's principles and practices to work for improving safety and health in my area of responsibility?

57) How does my overall performance stack up in regard to preservation of people, property, and profits through total accident control?

The APPRAISAL questions that you have just completed will highlight the things you are doing well and those in which improvements are called for. This pinpointing of "performance strength" and "performance improvement needs" is the first essential step to the self-development of good safety and health techniques. Self-development is what we do to learn new things, to expand and grow, to keep up with changing conditions, to improve and progress. This process is personal. Development cannot be spoon-fed to us. Each person is responsible for his or her own personal growth. Although others can give help, none of us can significantly improve our knowledge, skills, attitudes, and performance until we feel a personal responsibility to plan and manage our own program of self-development. Self-appraisal is basic and essential to the whole process.

To be able to develop and learn new things we must first appraise our present knowledge and attitudes.

IMPROVEMENT GOALS AND ACTION PLANS

Look carefully at your answers to the appraisal questions. You will probably be able to see areas in which you need to gain more knowledge and areas in which you need to make a personal commitment to change your attitude in terms of sound safety and health procedures.

For example, you may have answered the question "How completely do I investigate accidents?" by saying that you don't investigate them at all. The answer might lead to the conclusion that you need to decide that: investigation of accidents is important; that you will help in investigations; and that you may need to review the procedures to follow for investigating accidents.

Once you have analyzed your answers to these key questions, you can decide on the course of action you should take.

By evaluating your performance against certain "yardsticks" or standards (such as reflected in the Key Questions for Self-Appraisal), you arrive at a sort of performance profile—"Where I am" vs. "Where I want to be." Then you try to pinpoint the reasons for these results. Both sides of the coin are important here: WHY were certain results not as good as desired? Where were results good and WHY were they good? The more of the reasons you can identify (both strong points and points needing improvement), the more realistic and helpful your plans for improvement will be.

After considering the WHATs, HOWs, and WHYs of your job performance, you are ready to plan your self-development goals and actions plans. To decide WHAT TO DO and WHEN TO DO IT, it will be helpful to keep the following four guidelines in mind:

- Be sure that your self-improvement plans are SPECIFIC.
- Be sure that your plans are REALISTIC.
- Be sure that your PLANS ARE RELATED to your job performance and your development NEEDS.
- Be sure to SET TARGET DATES.

An approach like this requires substantial investment of time, thought, and effort. But it pays great dividends! Self-improvement is the pathway to continual learning, growth, improvement, and progress for you as an individual. Applying it to the area of safety and health also means that you are providing great service to your establishment and your employees by preserving lives, property, and profits.

GPO 880-082